Claims

1. An amplifier node for an optical network having at least one input port for receiving an optical wavelength-multiplex signal, a demultiplexer (10, 14, 18) for splitting the received optical wavelength-multiplex signal at least into payload channels on the one hand and a supervisory channel on the other hand, a sink (11, 16) for the supervisory channel connected to an output of the demultiplexer (10, 14, 18), and an optical amplifier (8) placed between the input port and the demultiplexer (10, 14, 18) and transited by the optical wavelength-multiplex signal, characterized in that the demultiplexer (10, 14, 18) is adapted to split off, as the supervisory channel, a wavelength, the attenuation of which between the input port and the sink (11, 16) is essentially the same in the pumped and unpumped states of the amplifier (8).

2. An amplifier node for an optical network comprising at least one output port for transmitting an optical wavelength-multiplex signal, a multiplexer (12, 17, 18) for assembling an optical wavelength-multiplex signal to be transmitted from at least payload channels on the one hand and a supervisory channel on the other hand, a source (11, 16) for the supervisory channel connected to an input of the multiplexer (12), and an optical amplifier (13) placed between the multiplexer (12, 17, 18) and the output port and transited by the optical wavelength-multiplex signal, characterized in that the multiplexer (12, 17, 18) is adapted to insert, as the supervisory channel, a wavelength, the attenuation of which between the source (11, 16) and the output port is essentially the same in the pumped and unpumped states of the amplifier (13).

3. An amplifier node of claim 1 or 2, characterized in that the amplifier (8, 13) is an erbium-doped fibre amplifier, and that the wavelength of the supervisory channel is between 1600 and 1650 nm, preferably between 1610 and 1650 nm.

4. The amplifier node according to one of the preceding claims, characterized in that the amplifier (8, 13) comprises an active medium in series with a filter for levelling the gain of the active medium in the wavelength band of the payload channels, and that the levelling filter is transparent for the supervisory channel.

5. The amplifier node of claim 1 and claim 4, characterized in that in the amplifier (8) the active medium is placed before the filter.

6. The amplifier node of claim 2 and claim 4, characterized in that in the amplifier (8) the active medium is placed behind the filter.

7. An optical network comprising a transmitter node (1), a receiver node (4) and an optical fibre (3) for transmitting an optical wave-length-multiplex signal comprising payload channels and a supervisory channel, wherein among the nodes (1; 4) at least one comprises an amplifier (8, 13) transited by the multiplex signal and that the transmitter node (1) comprises a source (11) for the supervisory channel and a multiplexer (12) for assembling the supervisory channel and payload channels to form the optical wavelength-multiplex signal, and the receiver node (4) comprises a sink (16) for the supervisory channel and a demultiplexer (14) for splitting the wavelength-multiplex signal into the supervisory channel and the payload channels, characterized in

that the multiplexer and demultiplexer (12, 14) are adapted to insert and extract, respectively, as the supervisory channel, a wavelength into/from the optical multiplex signal, the attenuation of which between source (11) and sink (16) is essentially the same in the pumped and unpumped states of the amplifier (8; 13).

8. The optical network of claim 7, characterized in that the amplifier (8; 13) is an erbium-doped fibre amplifier, and that the wavelength of the supervisory channel is between 1600 and 1650 nm, preferably between 1610 and 1650 nm.

9. The optical network of claim 7 or 8, characterized in that the amplifier (8, 13) comprises an active medium in series with a levelling filter for levelling the gains of the payload channels, and that the levelling filter is transparent for the supervisory channel.